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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,547	03/05/2002	Aviram Sariel	141/02497	8605
44909	7590	12/09/2005	EXAMINER	
WOLF, BLOCK, SCHORR & SOLIS-COHEN LLP 250 PARK AVENUE NEW YORK, NY 10177			BAYAT, ALI	
			ART UNIT	PAPER NUMBER
			2627	

DATE MAILED: 12/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/926,547	Applicant(s) SARIEL ET AL.	
	Examiner Ali Bayat	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39-41, 44-46, 48, 49, 51, 55, 57, 60, 63-67, 70, 74, 77, 78, 83, 90, 93-96 and 100 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 8, 11, 15, 16, 18, 19, 21-24, 34-36 and 38 is/are rejected.
- 7) ☒ Claim(s) 12 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/5/02; 8/13/03; 11/26/04; 5/05/05</u> | 6) <input type="checkbox"/> Other: _____  |

Continuation of Disposition of Claims: Claims pending in the application are 1,4,8,11,12,14-16,18-24,34-36,38-41,44-46,48,49,51,55,57,60,63-67,70,74,77,78,83,90,93-96 and 100.

## DETAILED ACTION

### *Claim Objections*

1. Claim1 is objected to because of the following informalities: in line 8 after generates the word " coefficients" is not clear or it seems to be miss spelled.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,4,8,11,15-16,18-19,21-24,34-36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chao et al. (US 6,529,614) in view of Hoffberg et al. (US 5,867,386).

In regard to claim 1, Chao provides for image data encoding light as a spaced-apart discrete input set with dead spaces between all input set elements (Fig.2 element 206, col.4 lines 60-65); transforming said light from an image space (Fig.2 step 250 col.4 lines 60-65) to a transform space utilizing a continuous optical Fourier transforming component (Fig.2 step 256 see Fourier lens) to apply a discrete linear transform to said input discrete data set, which transform generates coefficients that inter-relate a plurality of input set elements ( Fig.2 step 260 see lens 304 col.5 lines 1-5); and detecting data carried by said transformed light as discrete data by a spatially discrete sampler which detects spaced apart samples ( Fig.2 step 262, see CCD

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detector 220 col.5 lines 1-5). Chao does not provide for a discrete linear transform. Hoffberg discloses for a discrete transform (col.45 lines 25-31, note discrete cosine transform DCT). The prior art of Chao and Hoffberg are combinable because they provide for image compression. It would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Hoffberg (discrete cosine transform) with the system and method of Chao. Because the invention of Hoff berg provides for one type of transforming such as discrete cosine transform (DCT) in image compression. Therefore, it would have been obvious to combine prior art of Hoff berg with prior art of Chao to obtain the invention as specified in claim 1.

With regard to claim 4, Chao provides for a method comprising matching said continuous component to a discretization behavior of said discrete sampler using a matching component (col.5 lines 1-5, see CCD detector).

As to claim 8, Chao provides for a method comprising compressing or decompressing said data using a transform type compression/decompression method that uses said transforming (col.9 line 50).

In regard to claim 11, Chao provides for a method, wherein transforming comprises transforming using one or more optical elements, which perform a block, transform (col.11 lines 25-30).

With regard to claim 15 Chao provides for a method, wherein one or more optical element comprises a refractive element (Fig.3 elements 212 and 214).

As to claim 16 Chao provides for a method, wherein refractive element comprises a bi-refrigrant material (Fig.3 elements 212 and 214).

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In regard to claim 18, Chao provides for a method, wherein one or more optical elements comprise an element, which generates a matrix product (Fig.2 element 262).

With regard to claim 19, Chao provides for a method, wherein matrix product comprises a triple matrix product (Fig.6 col.8 lines 14-40).

As to claim 24, Chao provides for a method, wherein data represents an image sequence (Fig.2 steps 250,258 and 262).

In regard to claim 34, Chao provides for a method comprising post-processing data to generate data that represents a transform other than a Fourier transform (Fig.3 element 208)

With regard to claim 35, Chao provides for a method wherein post processing comprises optically post processing (Fig.3 element 208).

As to claim 36 Chao provides for a method, wherein post processing comprises spatially modulating light (Fig.3 element 206).

With regard to claim 38, Chao provides for a method, wherein preprocessing comprises mirroring data ( Fig.3 element 208).

In regard to claims 21-23 Chao provides for compression (col.9 line 50). Chao does not specifically provide for (JPEG, MPEG, Wavelet). Hoff berg provides for (JPEG, MPEG, Wavelet) compression. The prior art of Chao and Hoffberg are combinable because they provide for image compression. It would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Hoffberg (JPEG, MPEG, Wavelet compression) with the system and method of Chao. Because the invention of Hoffberg

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provides different type of compression such as JPEG, MPEG, Wavelet compression and they are standard, for compressing the still images and motion picture.

### ***Objected Claims***

3. Claims 12 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Reason For Allowance**

4. **Claims 39-41,44-46,48-49,51,55,57,60,63-67,70,74,77-78,83,90,93-96 and 100 are allowed.**

The following is an examiner's statement of reasons for allowance: the closest prior art of Chao et al. (US 6,529,614) provides for spatially modulated light source responsive to said input, for presenting said input as a spaced apart discrete input set with dead space between all input set elements (Fig.2 element 206, col.4 lines 60-65) at least one continuous Fourier transform optical component (Fig.2 step 256 see Fourier lens). **The prior art of Chao either alone or in-combination failed to teach or suggest for at least one continuous Fourier transform optical component for transforming said data between an image space and a transform space, using a two dimensional signed discrete linear transform; and a spatially discrete sampler for sampling at locations corresponding to said discrete transform as cited in independent claim 39. Further the prior art of Chao either alone or in-combination failed to teach or suggest for a plurality of optical groups each group comprising at least one optical sub-element, wherein each of said optical**

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**groups optically transforms a block of data using a signed linear discrete transform, wherein said block is part of a data set divided into block-transforming, including at least one other block being transformed in parallel by another optical group of said integrated element and said data is arranged as a spatially impulse image as cited in independent claim 90.**

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 571-272-7444. The examiner can normally be reached on M-F 9:00 AM-5:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ali Bayat *AB*  
Patent Examiner  
Group Art Unit 2625  
12/03/05

  
**KANUBHAI PATEL**  
**PRIMARY EXAMINER**